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AUTHOR Knight, Carol Lynn H.
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ABSTRACT

"Critical thinking" has been defined as reasonable, reflective thinking that is focused on deciding what to believe or do. Since the social sciences require practitioners to ask relevant questions, develop appropriate evaluation criteria, generalize from observed facts, conceptualize hypotheses, and make judgements, critical thinking skills should be incorporated into the teaching of the social science disciplines. Beyond merely providing students with facts and theories, the teaching of thinking would, optimally, produce a critical and creative disposition that enables a person to transcend biases, evaluate situations and ideas objectively, and create habits of mind that will transfer to actual life situations. Organization of a class to incorporate critical thinking skills should include instruction in decision making, problem solving, conceptualizing, and classifying; and should emphasize creativity in the thinking process. Of particular importance is the skill of argumentation. In analyzing extended arguments, students should be able to: (1) recognize an argument; (2) discern the conclusion; (3) identify the premises or reasons used to support the conclusion; (4) supply missing premises by examining the implied assumptions behind a given conclusion; (5) analyze the premises; (6) review alternative information or points of view; and (7) accept or reject a conclusion. Though there are very real limits to what can be accomplished in a single course, and instructors may face various practical and philosophical criticisms of critical thinking instruction, the benefits that can be derived from this approach are also real. Students are empowered through the development of their thinking skills, making them equal partners in the business of learning. (GFW)

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TEACHING FOR THINKING IN HISTORY AND THE SOCIAL SCIENCES

A Paper Presented at the Preconference Workshop
What Current Curricular Trends Tell Us About General Education
Virginia Community College Association Annual Convention
"Merging Access With Excellence" (7th, Roanoke, VA, October 12-14, 1989).

by

Carol Lynn H. Knight
Tidewater Community College - Chesapeake Campus
Chesapeake, Virginia

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TEACHING FOR THINKING IN HISTORY AND THE SOCIAL SCIENCES

Analyzing Arguments: An Interdisciplinary Problem and Approach

Last spring we heard that the Medical College Admissions Test was revised to reflect an increased emphasis on a student's writing and thinking skills because the Association of American Medical Colleges wished pre-med students to spend more time developing their abilities in problem solving, critical thinking, and communications. Thus, one more voice was added to the growing chorus insisting on the teaching of thinking skills across the curriculum. In an essay which is both polemical and practical, I wish to reiterate the case for teaching thinking skills, enumerate the types of thinking skills that should be taught in social science courses, take a close look at one method of teaching argument analysis, and address both the problems and benefits of this approach to teaching the social sciences.

The term critical thinking is often used genericly. Robert Ennis's widely accepted definition asserts that "critical thinking is reasonable, reflective thinking that is focused on deciding what to believe or do."[1] As such, it involves both dispositions and abilities employed across the whole range of thinking operations and strategies and does not exclude creative thinking.

The social sciences study people and how they live or have

lived. These disciplines: history, political science, economics, sociology, psychology and anthropology, require practitioners to ask relevant questions of their data, develop appropriate criteria for evaluating evidence, generalize from observed facts, conceptualize hypotheses which serve as possible solutions to posed problems, and make judgments about the relative strengths of competing hypotheses. In other words, embedded in the core of the subject matter are the thinking skills commonly called critical thinking and creativity, and the mental strategies used in decision making, problem solving and conceptualizing.

If as teachers we believe that it is not sufficient for us merely to pass on to our students the information and opinions that we have acquired, but rather that it is necessary for us to enable them to gather and evaluate the data they require to make judgments of their own, we have no choice but to teach thinking skills as part of the process of teaching our own subjects. Optimally, the teaching of thinking will produce a critical and creative disposition that enables a person to transcend biases, evaluate situations and ideas objectively and create habits of mind that will transfer to life.

Once we have decided to incorporate the teaching of thinking skills into discipline specific instruction, we find that most of the skills we will be teaching are not new but rather familiar tools used more explicitly, more precisely and metacognitively so that they will be transferable. However, as we prepare to incorporate more explicit thinking skills instruction into our courses we find that we are redesigning them.

Each of us determines the organization of our own courses, making difficult choices about how we spend our classroom time. We distinguish between the topics we will cover and the information we believe students can master on their own. If we choose to focus our attention on concepts and theories and the intellectual processes by which they are established and evaluated we must begin by identifying the principles we want our students to remember and then identify the thinking processes associated with them so that we can restructure our courses to teach those discipline specific concepts and the associated thinking skills at the same time. A distinction can be made between the "facts" of a discipline and the theories and principles used to interpret those facts. Both are essential to mastery of the subject matter, but while students may be able to master the objective data on their own, the interpretative frame and intellectual skills associated with forming, evaluating and even challenging it should take place within the more structured environment of the classroom. While knowledge of the facts is essential to understanding the principles and theories of a discipline, such specific knowledge is never the only goal of the course. If that were true, then teaching History, for example, would be nothing more than teaching chronology. Clearly students who can reproduce a list of the battles of the American revolution but not explain why Britain lost the war cannot be said to have learned that material.

Lets take a closer look at some of the thinking skills inherent in our disciplines. First, we all teach argumentation in some form. We require students to analyze documentary or

monographic literature in order to evaluate the thesis of varied works. We often instruct them in the specific fallacies associated with understanding the principles of our own fields such as errors in presuming causation or common difficulties related to statistical induction. We expect our students to be able to interpret charts, graphs, and scatter plots. We warn them that there are a host of impediments to clear reasoning, that we must become aware of our own biases, the extent to which our world views forge assumptions, and how wishful thinking may make us reject the conclusions of a perfectly sound study simply because we do not want to believe that it is true. We insist that even textbooks reflect the point of view of the author or authors and present arguments, not just facts. What we may not so often do, but should, is to teach our students the fundamentals of argumentation so that they will be able to break arguments down into premises and conclusions and spot common informal fallacies.

Similarly, we stipulate definitions of terms unique to our own disciplines. When we speak of "scarcity" or "socialization," or use common words like "exceptional" or "conservative" in particular ways we always explain what they mean in the specific context of our courses. Teaching how to define terms, the types of definitions and how they are best used, the problems with those that are too broad or narrow, circular, overly complicated, vague or persuasive means teaching the power of language used precisely.

We all teach how theories are constructed to explain events, usually in some stepped process and we teach a method for evalu-

ating those theories. This may include noting how variables are determined and defined, understanding the assumptions made, seeing how hypotheses are formulated, how predictions or implications are deduced, how predictions are stated and how to tell whether the evidence supports the theory or rejects it. This is teaching problem solving. It should not be restricted to a lesson associated with an early chapter in a textbook. It should be taught as a model which is used to throughout the course as new theories are introduced so that the problem solving procedure becomes second nature, and when students read later on about some new study they will immediately begin to ask how the project was designed.

Similarly, we all study the decisions made by groups or individuals. When the results of an election are evaluated, when the reasons for some action are analyzed we are looking fundamentally at the decision making process from the point of view of the end product. Seeing a problem this way helps clarify our understanding of the process. It lets us look at a given decision as contemporaries would have and gives students a method for understanding the past. It also helps them understand what questions could or should have been asked about a given event, not just what questions were asked.

Each of our disciplines imposes an elaborate system of classification on the data we use. We sort out theories and theorists by type, we deal with people and societies in groups, we are constantly arranging data so that it becomes manageable, so that it tells a story, so that order can be imposed upon it. This is a thinking skill, and its use and the implications of its

misuse, as in drawing false conclusions from analogies based on improper classifications, or the political ramifications of classification schemes by race, sex or age under the law are equally important to understand.

Finally, we all encourage creativity -- appropriate, original thinking producing new results. David Perkins and Edward de Bono[2] tell us that creativity is a habit of mind that can be developed. At the very least, the habit of using alternative thinking strategies can be encouraged. This needs to be built into our courses as much as any of the other skills mentioned. Asking the hypothetical question is not irrelevant, rather it is the key to breaking down the walls that separate persons and cultures. It can put us in another person's situation, help us see the world as he might, and help us frame questions we might otherwise never ask.

So it seems that while the subject matter of social science courses varies considerably, there is a core of thinking skills common to them all that should be taught explicitly in order to make our students independent consumers of the ideas we teach and to help them better understand the principles of the discipline. At the very least this core includes: argumentation, including defining terms; decision making and problem solving; conceptualizing and classifying; and creativity.

Since teaching argumentation is a core thinking skill common to the humanities and the social sciences, let's pursue it further. Teaching argumentation means, at least, teaching students how to distinguish between cogent and fallacious reasoning. In

other words, that we introduce them to the fundamental distinguishing characteristics of deductively and inductively valid arguments and the fallacies commonly attributed to errors in relevance, circular reasoning, semantic distinctions, induction, formal errors, or false premises, evidence or assumptions.[3] We must also teach the general rules of implication and consistency and point out the many impediments to cogent reasoning arising from ego and ethnocentricism as Richard Paul suggests[4]. Teaching argumentation also means teaching a method for argument analysis and argument construction. One approach, essentially generic but similar to that described by Neil Browne,[5] identifies the presence of an argument, identifies conclusions and premises - even supplying missing premises, analyzes each premise independently, including recognizing common fallacies, asks what other information or points of view should be considered, and requires students to justify their acceptance or rejection of the conclusion an argument. There follows an outline of this method as developed for use in my own classes with comments on the steps in the process.

A GUIDE TO ANALYZING EXTENDED ARGUMENTS

1. Is this an argument?
2. What is the conclusion?
3. What are the premises (reasons) supporting this conclusion? If the premises are themselves intermediate conclusions, identify the premises that support them.
4. Supply the missing premises. Use the "principle of charity."
5. Analyze each premise independently. Does it provide a good

reason to accept the conclusion?

6. What other information or points of view should be consider?

7. Do you accept the conclusion of this argument? Why or why not? Remember, you may agree entirely with the conclusion of an argument but still find the reasoning weak. If this is the case, consider how you would make a good argument for this conclusion.

1. Is this an argument? At first glance, this may seem an odd question to ask. Assigned readings even in textbooks, always present arguments. Students, however, do not realize this. They believe that our disciplines consist of a set of objective "facts" which will be revealed to them, and they are highly suspicious of and uneasy with conflicting interpretations. Asking this question has value if it does nothing more than to remind them of this fact. Further, if an argument can be defined as discourse having a conclusion and premises or reasons offered in support of it, the question alerts students to the fact that they will have to find the pertinent parts.

2. What is the conclusion? Perhaps this is the most difficult part of the whole assignment. Each of us realizes that asking students to locate the thesis, main point, or main idea of a given work usually produces unsatisfactory results. We must explicitly teach students how to find the conclusion and give them "guided practice" in the form of specific assignments in doing so.[6]

3. Identifying the premises. Once the conclusion has been

sighted, it is not too difficult for students to arrive at a list of reasons given in support of it. For more complicated arguments, such as are often found in scholarly journals or monographs, explicitly teaching some simple outlining tool -- such as Tree diagrams or Toulmin's model -- may make delineating the structure of the argument easier.[7]

4. Supplying the missing premises. It makes no sense to deal with a given argument in an incomplete or weakened form. What are the implied assumptions that lie behind the stated premises? Make them explicit. Apply the principle of charitable interpretation.[8] At this point, the student has outlined the argument. He knows exactly what was said. He is now in a position to deal with the argument critically.

5. Analyzing the premises. The first point that ought to be made is that ten bad reasons offered in support of an idea are no better than one bad reason. All of us are easily overwhelmed by what appears to be the "weight of evidence" an author presents, particularly when confronted with unfamiliar materials and ideas. By analyzing the premises independently -- as if each one were the only one offered -- and asking if it provides a good reason to accept the conclusion, this tendency may be avoided. This is also the step where students can begin to recognize and understand the impact of logical fallacies and rhetorical devices on the strength of arguments. The plain fact is that bad arguments can be very convincing. Dealing with fallacies as they occur in class discussions of the reading assignments alerts students to this.[9]

6. Other information or points of view. At this point, the

question always is raised about the competence of first and second year students to know enough about the subject they are studying to make judgments about what other information or points of view should be considered. If our goal is to teach them to analyze arguments this step is vital. One way to overcome their deficiency is to structure assignments in such fashion as to provide them with the information they will need. Assigning the analysis, comparison and evaluation of a group of related readings offering competing interpretations of some topic covered in the textbook might be one way to do this.[10]

7. Accepting or rejecting the conclusion. In the end, some final evaluation of the strength of the argument is required. For the most part, we are dealing with strong or weak arguments not valid or invalid ones. Determination of strength or weakness will depend very much on perceptions of the truth of the premises and their relevance to the issue at hand. Students may easily find that they agree entirely with the author's conclusion, but not for the reasons offered. At this point, the argument analysis model becomes an argument construction model. Given the information the student now has he is able to build a stronger argument for the same position. Challenging him to do so will make him a better writer and thinker.

No advocacy of teaching thinking skills would be complete if it failed to recognize the problems encountered in this approach to teaching as well as the benefits to be derived from it. Higher education has come under fire both for failing to teach the basics of cultural literacy by E. D. Hirsch and for teaching

cultural and even moral relativism by Alan Bloom.[11] Those involved in the critical thinking movement are sensitive to the charge that they might be particularly faulted for this since teaching thinking does take time away from classroom time spent teaching "the facts," or at least going over them, and because teaching argumentation, problem solving or decision making skills and encouraging creativity clearly will lead students to the conclusion that there is almost always more than one way of looking at issues. So, are we guilty as charged? Or, is the charge legitimate?

Questions about cultural literacy may most simply be answered by testing. If students perform as well or better on questions of fact than they did previously, we are justified in spending class time on principles and applications. There never was the suggestion that students did not need to know basic facts, only that while they could learn them on their own, they could not learn higher order thinking skills and applications of the principles of our disciplines on their own, so that was where we were obliged to devote instructional time. This is not watering down courses, it is enriching them. Questions of moral relativism are more difficult. Fundamental values and beliefs rarely are changed by rational persuasion. The purpose of higher education is not necessarily to shape those values but to acquaint students with the wider world of values, to legitimatize the existence of other world views, and perhaps finally to help them understand why they hold the values they do. This does not mean that all value systems are equally good or equally to be tolerated. It does not justify the policies of a Hitler. But it does

mean that individuals of good conscience can have legitimate reasons for coming to conclusions quite different from our own.

On a more practical level other criticisms may emerge. There is no doubt that this approach to teaching increases a student's responsibility for their own learning. The teacher becomes the resource and the mentor. The student is not allowed to be a passive learner. From this may come complaints that the course is too difficult. Persuading students of the value of a thinking skills approach may begin with the statement of course objectives provided in the syllabus but ultimately will depend upon how lively, interesting, challenging and useful the instruction proves to be. Also, while "critical thinking" is a popular educational buzzword support for this approach, once it becomes clear that preparation and implementation involve an institutional financial commitment, may be less than enthusiastic.

We must also recognize that there are very real limits to what can be accomplished in a single course. Undoubtedly this approach to teaching would work best in a system that required all students to take an introductory course in informal logic or practical reasoning and where there was an institutional commitment to teaching thinking skills across the curriculum. Isolated instruction can have an impact but its effect is diminished by lack of reinforcement.

Finally, we all have to be concerned with assessment of the value added to our courses and our student's understanding of the disciplines we teach by incorporating thinking skills instruction into our courses. Current assessment procedures fall short of

what is required. A standardized thinking skills inventory, independent of subject matter, given at the beginning and conclusion of a course could tell us if students have improved abilities to perform such operations as drawing correct and appropriate inferences or conclusions from observed or supposed facts, recognizing assumptions implied by given statements and recognizing the form of and evaluating the strength of arguments they encounter. Similarly standardized discipline specific tests, such as the Educational Testing Services's Advanced Placement exams for American History, can tell us if they have learned a substantial body of basic factual information. What we need to develop is an instrument, for each teaching area which would measure the quantum leap in understanding that some believe takes place when students are given the opportunity to combine learning a vast quantity of new information with the appropriate tools for understanding, manipulating and using that information. What we would be measuring is not an arithmetic but rather a geometric increase in their knowledge.

This brings us to a recognition of the benefits to be derived from this approach to teaching our courses. Despite the acknowledged problems, when we help our students develop their thinking skills we empower them. In a very real sense we make them equal partners in the business of learning rather than disciples uninitiated into the mysteries of the cult. If we want them to become autonomous, lifelong learners we must help them sharpen the skills that they will need to do this. We cannot teach them the answers to questions, we must teach them how to decide what questions should or could be asked. A democratic

society requires an informed citizenry that is able to make the best choices from among competing claims. Preparing students to do this is a legitimate educational goal.

ENDNOTES

(1) Robert H. Ennis, "A Concept of Critical Thinking," Harvard Educational Review, 32 (Winter, 1962), 81-111.

(2) David Perkins, The Mind's Best Work (Cambridge, Mass.: Harvard University Press, 1981) and Edward de Bono, Lateral Thinking: Creativity Step-by-Step (New York: Harper and Row,) 1970.

(3) Among the many fine textbooks that treat argumentation are: Neil M. Browne and Stuart M. Keeley, Asking the Right Questions: A Guide to Critical Thinking (Englewood Cliffs: Prentice Hall, Inc., 1986) and Michael Scriven, Reasoning (New York: McGraw-Hill Book Co., 1976).

(4) Richard W. Paul, "Teaching Critical Thinking in the 'Strong Sense,'" Informal Logic Newsletter, Vol 4 (May, 1982), 2-7.

(5) Brown and Keeley, Asking the Right Questions.

(6) Barry K. Beyer, Practical Strategies for the Teaching of Thinking (Boston: Allyn and Bacon, Inc., 1987), Ch. 6.

(7) Tree diagrams are discussed in Monroe C. Beardsley, Thinking Straight (4th ed.; Englewood Cliffs: Prentice Hall, Inc., 1975) 16-20. Toulmin's model for analyzing arguments is in Steven Toulmin, Richard Rieke and Allan Janik, An Introduction to Reasoning (2nd ed.; New York: Macmillan Publishing Co., 1984).

(8) A good explanation of this term is found in Jerry Cederblom and David W. Paulsen, Critical Reasoning (2nd ed.; Belmont CA: Wadsworth Publishing Co., 1982) 12-14.

(9) A find specialized work dealing with fallacies is T. Edward Damer, Attacking Faulty Reasoning (2nd ed.; Belmont CA: Wadsworth Publishing Co., 1987).

(10) An example of such an assignment would be the following readings on the Cuban Missile Crisis: Current, Williams, Freidel, and Brinkley, American History: A Survey (7th ed.; New York: Alfred A. Knopf, 1987) 869-71; Editorial, "Missiles of October, Then and Now," New York Times, Aug. 30, 1987; George

Will, "Romanticizing the Cuban Missile Crisis," The Washington Post, Sep. 3, 1987; Haynes Johnson, "Failures with a Difference," The Washington Post, Nov. 19, 1986; and Thomas G. Paterson and William J. Brophy, "October Missiles and November Elections: The Cuban Missile Crisis and American Politics, 1962," Journal of American History, 73 (Jun., 1986), 87-119.

(11) Eric D. Hirsch, Cultural Literacy: What Every American Needs to Know (Boston: Houghton Mifflin, 1987) and allan Bloom, The Closing of the American Mind (New York: Simon and Schuster, 1987).

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